

Contents

Letters to the Editor

- Discovery of a new extremely hot DA white dwarf close to the open cluster NGC 6405
Koester, D., Reimers, D. L1
- Laboratory microwave spectroscopy of the C₃N radical in the vibrationally excited state ν_5
Mikami, H., Yamamoto, S., Saito, S., Guélin, M. L5
- Radio continuum emission from the pre-main sequence Herbig Ae star AB Aurigae
Güdel, M., Benz, A.O., Catala, C., Praderie, F. L9
- Wave propagation in dusty cool stellar envelopes
Havnes, O., Hartquist, T.W., Pilipp, W. L13

Cosmology

- A search for Lyman- α emitting objects in a structure between a quasar pair at a redshift of 2
Rhee, G.F.R.N., Webb, J.K., Katgert, P. 1

Extragalactic astronomy

- The magnetic field structures in two nearby spiral galaxies. I. The axisymmetric spiral magnetic field in IC 342
Krause, M., Hummel, E., Beck, R. 4
- The magnetic field structures in two nearby spiral galaxies. II. The bisymmetric spiral magnetic field in M 81
Krause, M., Beck, R., Hummel, E. 17
- Observations of nebular emission lines towards SN 1987 A
Wampler, E.J., Richichi, A. 31
- Isophote shapes of elliptical galaxies. II. Correlations with global optical, radio and X-ray properties
Bender, R., Surma, P., Döbereiner, S., Möllenhoff, C., Madejsky, R. 35
- Three prototype compact steep spectrum radio sources
Fanti, C., Fanti, R., Parma, P., Venturi, T., Schilizzi, R.T., Nan Rendong, Spencer, R.E., Muxlow, T.W.B., van Breugel, W. 44
- A comparative study of Na I and Ca II infrared lines in stars, star clusters and galaxy nuclei: an alternative to the dwarf-enriched population
Allain, D., Bica, E. 57
- The preponderance of bar and ring features in starburst galaxies and active galactic nuclei
Arsenault, R. 66
- Supernovae in Markarian galaxies
Turatto, M., Cappellaro, E., Petrosian, A.R. 79

- Empirical amplitude-luminosity relation of S Doradus variables and extragalactic distances
Wolf, B. 87

Galactic structure and dynamics

- Statistical distributions and gravitational halos
Membrado, M., Pacheco, A.F., Sañudo, J. 92
- Ring currents and poloidal magnetic fields in nuclear regions of galaxies
Lesch, H., Crusius, A., Schlickeiser, R., Wielebinski, R. 99

Formation, structure and evolution of stars

- Transient low-mass X-ray binaries in quiescence. II. CCD photometry and spectroscopy of 4U 2129+47
Chevalier, C., Ilovaisky, S.A., Motch, C., Pakull, M., Mouchet, M. 108
- Are massive X-ray binaries runaway stars?
van Oijen, J.G.J. 115
- Global modes of oscillation of magnetized stars
Nasiri, S., Sobouti, Y. 127
- Phase transitions in dense matter and radial pulsations of neutron stars
Haensel, P., Zdunik, J.L., Schaeffer, R. 137
- (RN) The substellar masses of Wolf 424
Heintz, W.D. 145
- Optical one second quasi-periodic oscillations in VV Pup-pis
Larsson, S. 146
- OH maser emission from young planetary nebulae
Zijlstra, A.A., te Lintel Hekkert, P., Pottasch, S.R., Caswell, J.L., Ratag, M., Habing, H.J. 157

Stellar atmospheres

- VLBI observations of θ^1 Orionis A
Felli, M., Massi, M., Churchwell, E. 179
- A spectroscopic survey of red dwarf flare stars
Pettersen, B.R., Hawley, S.L. 187

Diffuse matter in space (including H II regions and planetary nebulae)

- (RN) Estimates of Stark width along a homologous sequence
Dimitrijević, M.S., Popović, M.M. 201
- A coal model for the carriers of the unidentified IR bands
Papoular, R., Conard, J., Giuliano, M., Kister, J., Mille, G. 204
- The evolution of planetary nebulae nuclei: models against observations
Tylenda, R., Stasińska, G. 209

The Sun

Solar differential rotation as a multiparameter turbulence problem

Tuominen, I., Rüdiger, G. 217

Speckle interferometric study of the solar granulation from centre to limb

Druesne, P., Borgnino, J., Martin, F., Ricort, G., Aime, C. 229

Characteristics of type III bursts in the solar wind from simultaneous observations on board ISEE-3 and Voyager

Lecacheux, A., Steinberg, J.-L., Hoang, S., Dulk, G.A. 237

Model interpretation of type III radio burst characteristics. II. Temporal aspects

Reiner, M.J., Stone, R.G. 251

Life and death of cosmions in stars

Bouquet, A., Salati, P. 270

The solar system

Evaluation of cometary dust parameters from numerical simulations: comparison with an analytical approach and the role of anisotropic emissions

Fulle, M. 283

The ages of asteroid families

Farinella, P., Carpino, M., Froeschlé, Ch., Froeschlé, Cl., Gonzi, R., Knežević, Z., Zappalà, V. 298

(RN) Molecular band polarization in comet P/Halley

Sen, A.K., Joshi, U.C., Deshpande, M.R. 307

Physical and chemical processes

Distributed processes as contributors to the acceleration of cosmic rays

Giler, M., Osborne, J.L., Ptuskin, V.S., Szabelska, B., Wdowczyk, J., Wolfendale, A.W. 311

Coronal Mg^{+9} : collisional excitation of the $2s-2p$ multiplet

Burgess, A., Mason, H.E., Tully, J.A. 319

Equilibrium configuration for an inertially dragged viscous fluid around a slowly rotating compact object

Prasanna, A.R. 329

AMLT: anisotropic mixing length theory

Canuto, V.M. 333

Particle acceleration at modified shock fronts. I. The power-law spectrum for relativistic flows

Schneider, P., Kirk, J.G. 344

Instruments, data processing, and computational methods

A conservative second-order difference scheme for curvilinear coordinates. I. Assignment of variables on a staggered grid

Mönchmeyer, R., Müller, E. 351

High resolution solar bidimensional spectroscopy with a Universal Birefringent Filter in tandem with a Fabry-Perot interferometer

Bonaccini, D., Cavallini, F., Ceppatelli, G., Righini, A. 368

Towards the birth of gravitational astronomy. I. Number of events expected from gravitational wave detection by interferometry

Boulanger, J.L., Duruisseau, J.P., Le Denmat, G., Tourrenc, P. 375

Towards the birth of gravitational astronomy. II. Directivity and number of events in coincidences expected from gravitational wave detection by interferometry

Boulanger, J.L., Duruisseau, J.P., Le Denmat, G., Tourrenc, P. 381

(RN) Image deconvolution applied to the 3C 273 jet

Fraix-Burnet, D., Nieto, J.-L., Roques, S. 387

Abstracts of articles which have been published in A. & A. Suppl. Ser. 77, No. 3

Simulated aperture-photometry on CCD-frames for 67 Southern Galaxies in B and R

Peletier, R.F., Lauberts, A., Valentijn, E.A. 391

Element identifications in IUE spectra of chemically peculiar stars: the Pt-Au-Hg sequence

Fuhrmann, K. 391

$\Delta\alpha$ -photometry of Be/shell stars

Pavlovski, K., Maitzen, H.M. 391

Observed dynamical parameters of the disk clusters of the Large Magellanic Cloud. II

Chrysovergis, M., Kontizas, M., Kontizas, E. 392

Observations of the OH radio lines in comet P/Halley 1986 III

Gérard, E., Bockelée-Morvan, D., Bourgois, G., Colom, P., Crovisier, J. 392

A catalogue of right ascensions and declinations of FK4 stars

Sadžakov, S., Dačić, M. 392

A Catalogue of Jovian decametric radio observations from January 1982 to December 1984

Leblanc, Y., Gerbault, A., Lecacheux, A. 392

Photometry and spectroscopy of stars in northern H II regions

Forbes, D. 393

Photographic *UBV* photometry to $V \sim 21$ in the Puppis window

Cameron Reed, B. 393

Search for water vapor masers in the direction of IRAS sources associated with H II regions and molecular clouds

Braz, M.A., Scalise, Jr., E., Gregorio Hetem, J.C., Monteiro do Vale, J.L., Gaylard, M. 393

Lightcurves of the Algol-variable U CrB in the UPS photometrical system

van Gent, R.H. 393

The absolute $H\beta$ fluxes for southern planetary nebulae

Acker, A., Stenholm, B., Tylenda, R. 394

Orbital double stars with variable components (text in French)

Baize, P., Petit, M. 394

Erratum: Walraven *VBLUW* photometry in basal halo fields. I. Photometric data for Selected Areas SA141 (South Galactic Pole), SA94 and SA107

Pel, J.W., Trefzger, C.F., Blaauw, A. 394

Erratum: Fe II References Catalogues (Ser. 77, No. 1, 155)

Viotti, R., Baratta, G.B. 394

